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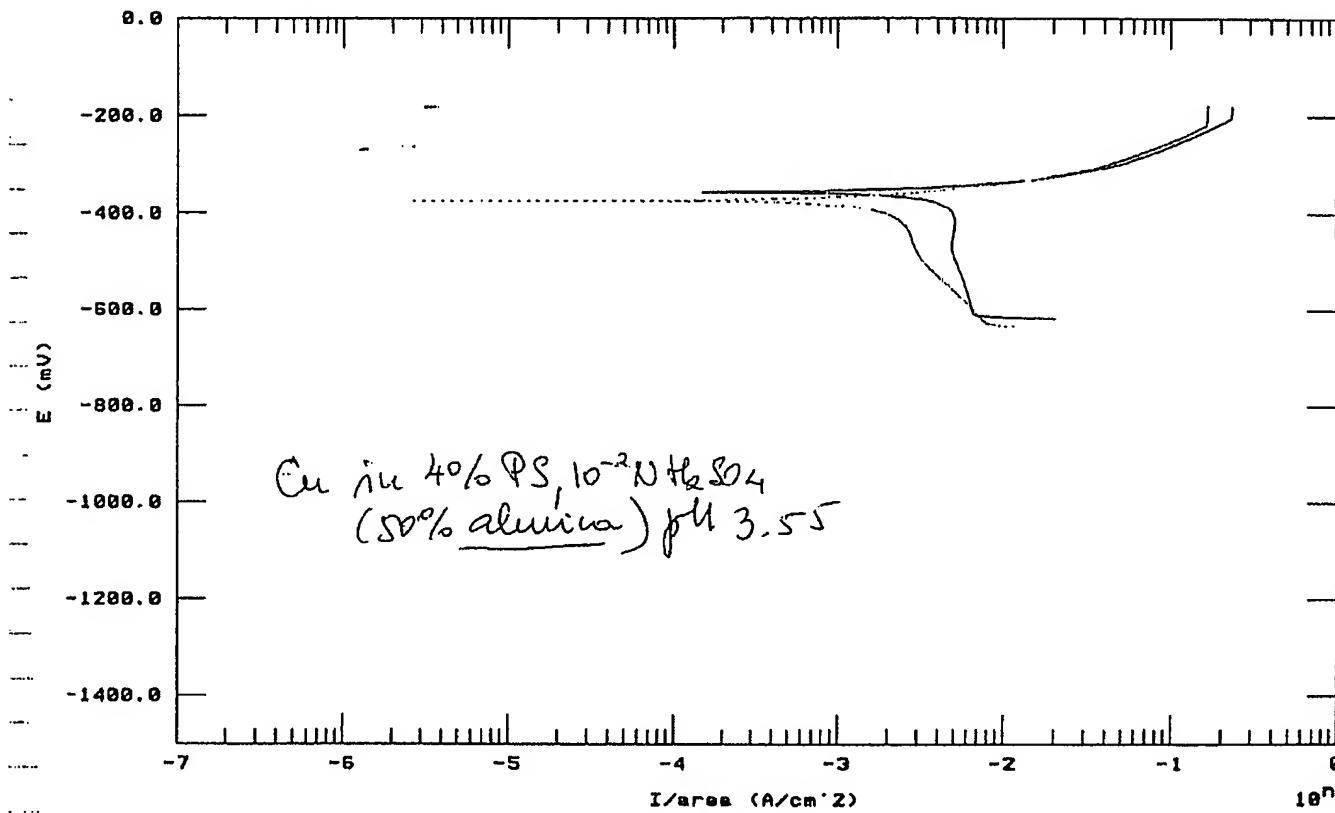
Cabot Research Notebook

All of the tests to day were conducted on copper wire in slurries prepared with alumina. The following was observed:

- 1) alumina has not altered the observed kinetics in a ferrous sulfate/nitric acid slurry. (Figure below)

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- 2) Peroxide is an oxidizer which without added acid shows pH of close to 5. Solution forms Cu²⁺ with rates below $200 \text{ A}/\text{min}$. Addition of acids increase Cu dissolution but at the most in sulfate acid pH 2.49, the chemical rate is still well below $1 \times 10^{-2} \text{ A}/\text{cm}^2$.

- 3) Important: 9% H_2O_2 , 2% oxalic acid pH 1.91 shows very interesting kinetics: fast dissolution w/ alumina and excellent passivation after alumina. Figure on p 20.

Signed

John B.

Date

Understood and Witnessed

Signed

Date

Date and sign every entry.

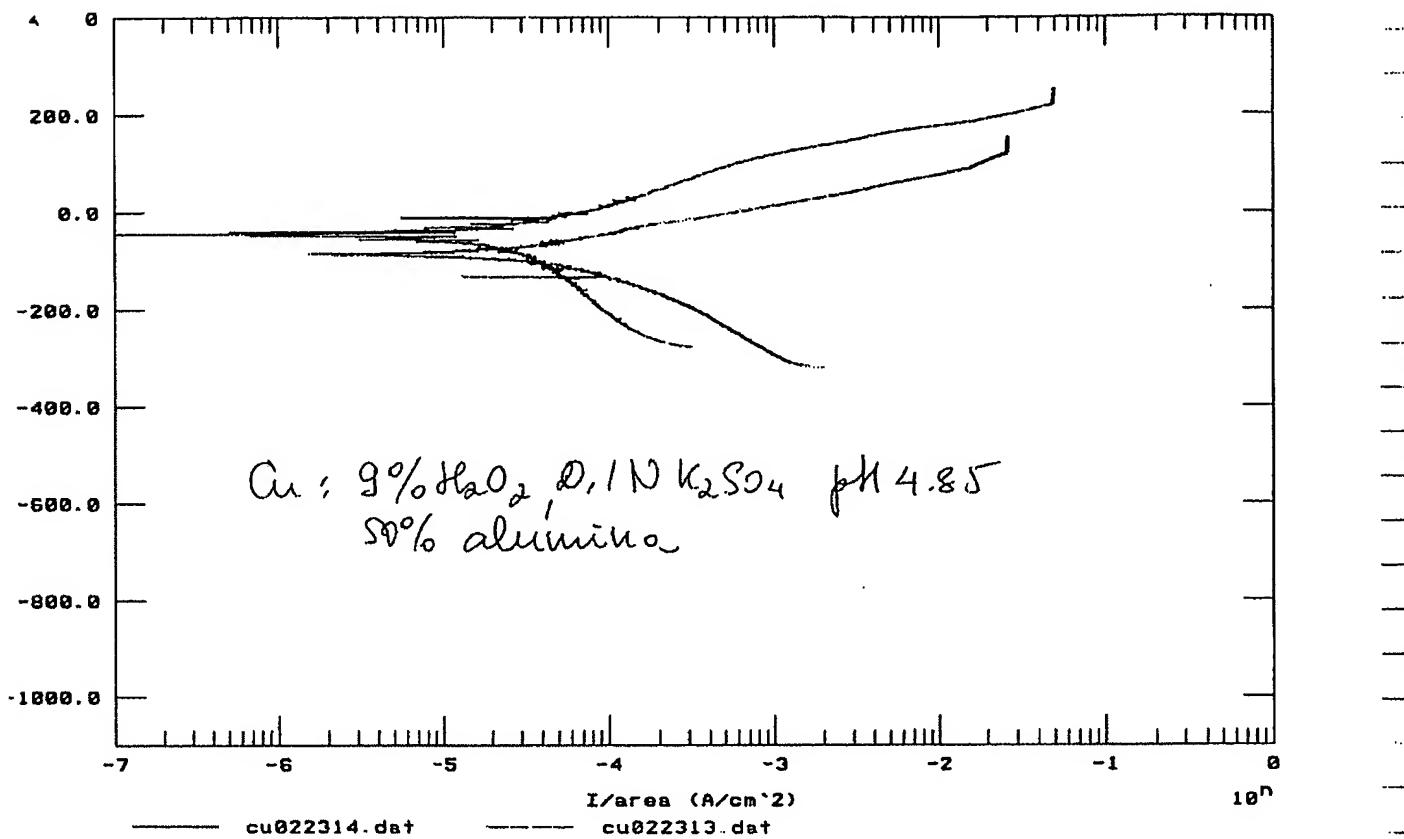
Submit an Invention Disclosure of anything possibly new and inventive.

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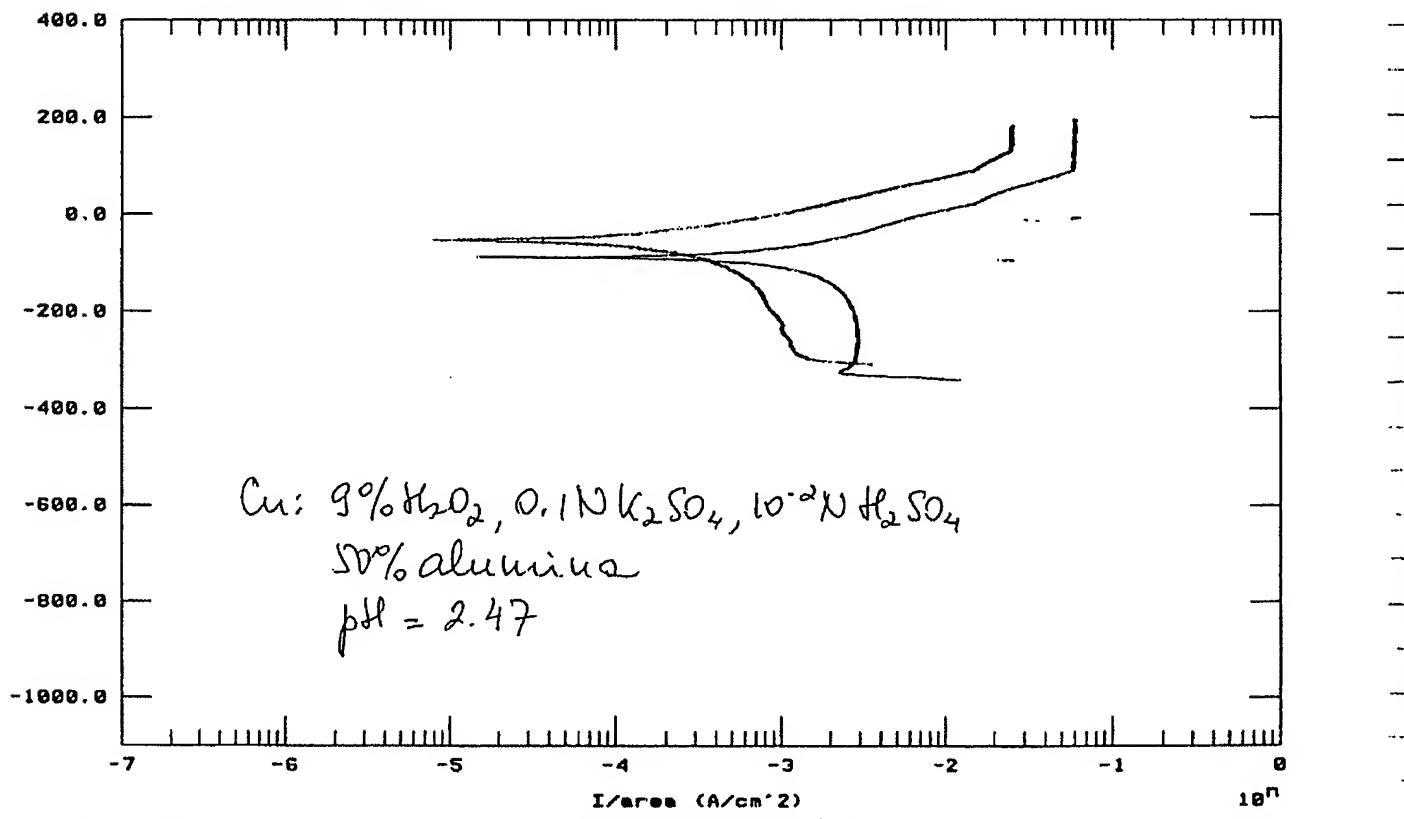
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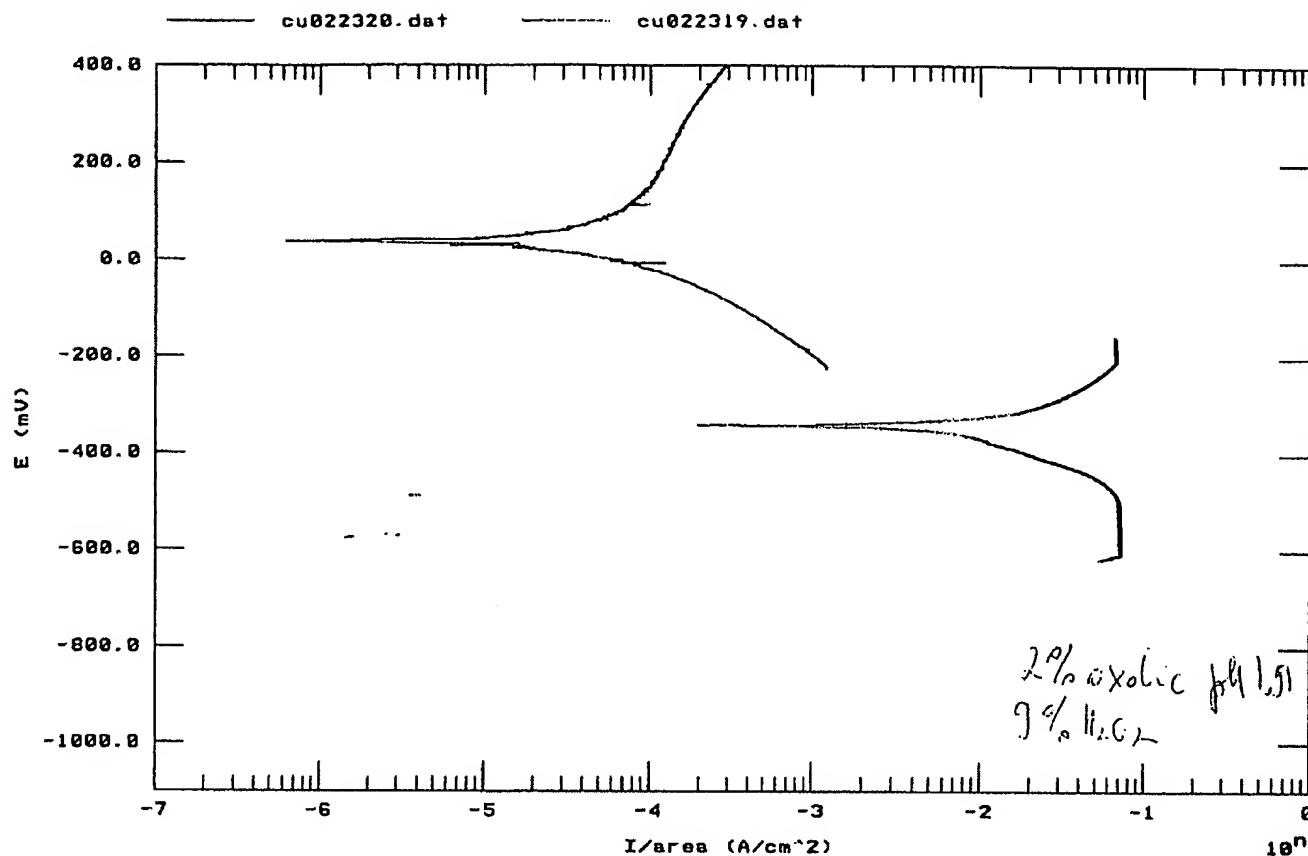


igned *Bob De*

Understood and Witnessed

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Cabot Research Notebook



Feb 26, 1996

Ti was tested in persulfate/oxalic acid (i.e. Cu "sludge" with and without Calcium fluoride).
Very low Ti dissolution rate ($< 1 \times 10^{-3} A/cm^2$) increases the abet 3 $\times 10^{-2}$ or 6000 \AA/min with Calcium fluoride.
Concern: Ti is not reprecipitating in fluoride solutions.

Cu in the same solution is still showing the same kinetics with average rate of $2 \times 10^{-4} A/cm^2$...

Cu in $Fe(NO_3)_3$ with BTA and NLS shows controllable chemistry: there is significant "passivation" with BTA. But NLS, even in a ratio of 0.002%, diminishes the effect of BTA. Controllable chemistry! Figure on p 22.

Signed 19th Dec

Date

Understood and Witnessed

Signed

Date